

**Rio Linda /Elverta Community Water District
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Water Shortage Contingency

RLECWD is currently supplied entirely by groundwater from beneath its service area. During the coming three years this supply will continue. Even if a severe drought occurs, there would be no reduction of available groundwater in this time frame.

Table 22 - Three Year Estimated of Minimum Water Supply 2006-2008 - AFPY

Source	Year 1	Year 2	Year 3
Local Groundwater	6,750	7,100	7,400
	No impact	No impact	No impact

The above table includes water pumped by the RLCWD and private wells within the RLECWD service area. Similarly there would be no impact on RLECWD revenues and no impact on expenditures during this period.

Future scenarios indicate growing water demand for RLECWD and RLECWD participation in the regional conjunctive use program. Under the Water Forum Agreement (WFA) surface water supplies will be restricted and are not likely to be available to RLECWD. In that case RLECWD will have to rely on groundwater pumping and recycled wastewater.

RLECWD has not yet adopted a system wide Catastrophic Supply Interruption Plan. The following table reviews potential supply interruptions and actions for RLECWD.

Table 23 – Some Impacts and Responses for a Catastrophe

Type of Event	Potential Impacts	Potential Responses
Localized short term power failure	Well power supply interrupted. Distribution system pressure reduction.	Emergency generators at selected wells start up to maintain system pressure. Request customers to reduce water uses with announcements via radio, television and internet. Coordinate with SMUD.
Regional long term power failure	Well power supply interrupted. Distribution system pressure loss.	Emergency generators at selected wells operate until fuel supply is exhausted. Back up fuel requested. Order customers to curtail water uses with direct phone calls, and announcements via radio, television and internet. Issue boil water order. Coordinate with SMUD.

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Fire, destruction or inaccessibility to District headquarters	Destroys computers, some service trucks and historical records. Potential interruption of electronically coordinated pumping controls.	Operating system is decentralized. Wells can be operated independently in the field. Offsite back-up of data retrieved. Borrow or rent substitute field vehicles.
Malicious Act or Major explosion near facilities.	Severe structural damage to storage tank or transmission pipe.	Valve off tank or pipelines. Utilize additional wells to maintain system pressure. Request use of emergency connection with neighboring utilities. Request customers to reduce water uses with announcements via radio, television and internet. Request assistance from Office of Emergency Services.
Flood from Dry Creek or breach of levee along Natomas East Main Drainage Canal	Inundation and potential contamination of wells. Access reduced and power interrupted to pumps.	Wells removed from service. Other wells used to pump water. Possible "boil water" order. Order customers to curtail water use. Request use of emergency connection with neighboring utilities. Alert customers with direct phone calls, and announcements via radio. Coordinate with SAFCA.
Earthquake - Calif. Seismic Safety Commission map "Earthquake Shaking Potential for California" dated Spring 2003, shows that RLCWD service area is located in a "region far from known active faults and will experience low levels of shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged.	Rare high magnitude earthquakes could cause significant shaking in Rio Linda resulting in leaks to water mains, services and storage tanks.	RLECWD staff would be responsible for control and repair of damage. Help from Northern CA. utilities is unlikely since they would be responding to their own situations and aiding water suppliers closest to the epicenter.

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Existing RLECWD regulations (Chapter 4.15) incorporate water conservation as an integral part of the district's total water management program. As a condition of water service, the water waste activities of Table 22 are prohibited.

Table 24 Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibitions Becomes Mandatory
Open hoses are not permitted. Automatic shut-off nozzles are required.	condition of water service
Washing down of sidewalks, driveways, parking lots, or other paved surfaces is prohibited except to alleviate immediate fire or sanitation hazards.	condition of water service
New connections to the District's water distribution system may be limited	RLECWD Board resolution declares that a water shortage emergency condition prevails in any portion of the District

Draft Water Shortage Contingency Regulation (starting on page four of this chapter) provides additional prohibitions at stages III, IV, and V.

Existing regulations require that when a District representative determines that a person is in violation of the District's conservation plan, the following corrective action will be initiated:

Table 25 Penalties and Charges for Existing Regulations

Penalty or Charge	Stage when Penalty takes Effect
Verbal or written notification that a violation has been determined and how it shall be corrected.	First violation
Written warning indicating that a verbal and/or written notice was given initially and that the consumer has neglected to correct the problem following the notice, warning that a subsequent violation will result in citation and fine.	Second violation
Written notification indicating that a charge will be added to the consumer's next water bill.	Third violation
Water service will be discontinued. To reestablish service, a charge for temporary service turnoff and a charge for service turn-on must be paid.	All subsequent violations

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Draft Ordinance for Water Shortage Contingency

California Water Code Section 10632 states, in part: “The (UWMP) plan shall provide
(h) A draft water shortage contingency resolution or ordinance.”

This draft regulation attempts to be consistent with that of other water supplier signatories of the Water Forum Agreement for implementation and public relations purposes.

It is helpful to understand the application of RLECWD water consumption. Figure 10 shows the changing percentage of cumulative water consumption throughout the year. During January consumption consists of only indoor use and water losses (non-revenue water). As the season progresses, increasing irrigation occurs. By years end, the annual consumption is split: 47 percent for exterior use, 44 percent for interior use, and the remaining 9 percent is non-revenue water.

Figure 10 –RLECWD Cumulative Annual Water Use Distribution

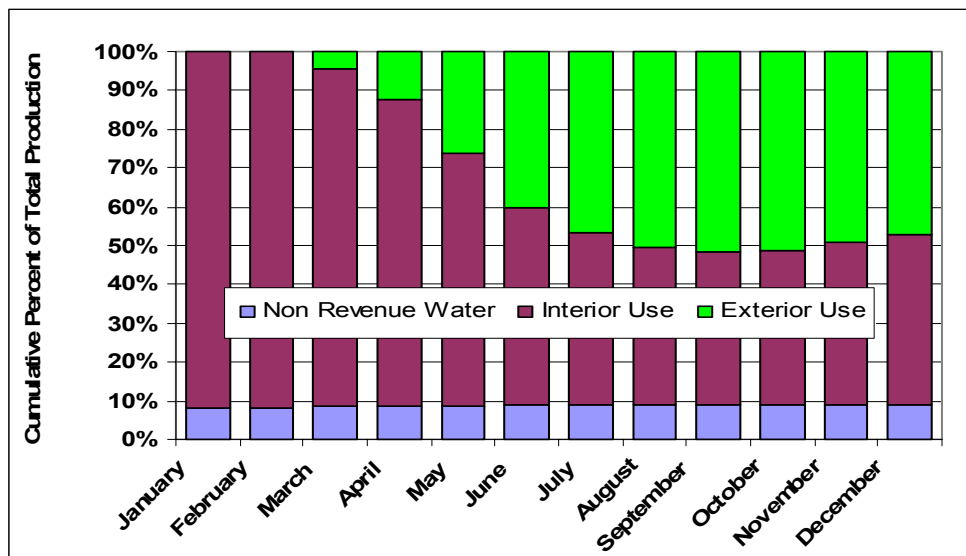
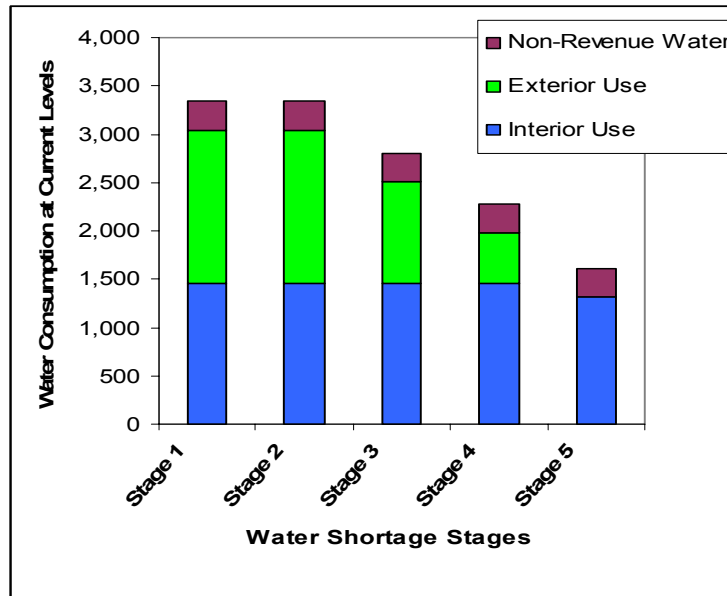


Figure 11 uses current water production to illustrate water demand reductions under different water shortage stages as proposed in the draft regulation. The profile would most likely maintain its shape with more customers and greater volume of water produced. Under Stage 1 and Stage 2 there would be no apparent change of water demand. Stage 3 reduces the exterior use by one-third. Stage 4 reduces the exterior use by an additional third. Stage 5 totally prohibits landscape irrigation. Interior use remains the same until Stage 5 when it drops by a few percent. Non-revenue water is difficult and expensive to reduce and remains constant at nine percent in this example.

Figure 11 - Water Demand Reductions at Different Water Shortage Stages



Actual reductions in water use can be determined on two levels:

- Metered amounts of water pumped and imported to the distribution system, and
- Metered consumption by customers during billing periods.

Draft Water Shortage Contingency Ordinance

The Board of Directors may initiate the actions of this ordinance.

Several “triggering mechanism” may indicate the need to implement one of the water shortage stages. Potential “triggering mechanisms” are:

- A. A regional water supply shortage exists and a regional public outreach campaign is being implemented asking customers to reduce water use.
- B. Groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination).
- C. Alternative water supplies are unavailable
- D. Groundwater levels or groundwater quality are approaching action levels prescribed by the Sacramento Groundwater Authority, Sacramento County or some regulatory body.

Stage One: Normal Water Supply

Definition:

The district’s supply or distribution system is able to meet all water demands of its customers in the immediate future.

Stage One Policy:

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Water is a limited natural resource. It must be used efficiently and economically to meet the health and safety needs of the community. This regulation includes RLECWD regulation section 4.14.010 – 4.14.2 entitled Water Conservation.

Triggering Mechanism:

Full water deliveries are anticipated from all District sources.

Consumption Limits:

No percentage cutback required.

Agency Actions:

During Stage 1, all normal water efficiency programs will continue.

Requested Consumer Action:

Follow the basic water efficiency measures set forth in the Water Conservation regulations.

Penalties:

Remain as stated under RLECWD regulations section 4.14.250 b.

Stage Two – Water Warning

Definition:

There is a probability that the District's supply or distribution system will not be able to meet all the water demands of its customers. With the cooperation of customers, the District's objective is to reduce system demand by five – ten percent of average district production.

Stage Two Policies:

- a. All Stage 1 actions remain in force.
- b. Reduce landscape irrigation by 10 to 15 percent to achieve 90 to 85 % of evapotranspiration. Reschedule irrigation timers and controllers. Install hose meters on manual irrigation hoses.
- c. Initiate three day per week irrigation schedule to prepare customers for stage three or worse conditions.
 - Odd street numbers irrigate on three days per week, such as Saturday, Monday and Wednesday.
 - Even street numbers irrigate on three days per week such as Sunday, Tuesday and Thursday.
 - No one irrigates on Friday.
- d. Customer should read their water meters every month.

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Stage Two Triggering Mechanism may be any of the following:

- A. A regional water supply shortage exists and a regional public outreach campaign is being implemented asking customers to reduce water use.
- B. Groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination).
- C. Alternative water supplies are unavailable
- D. Groundwater levels or groundwater quality are approaching action levels prescribed by the Sacramento Groundwater Authority, Sacramento County or some regulatory body.

Announcement of the need to implement Stage Two Conservation Measures due to drought should occur soon after April 1.

Stage Two Consumption Limits:

All customers would be requested to reduce consumption by 5 - 10% for the duration of the water warning.

Agency Actions:

Continue the basic water efficiency program elements, and initiate a water shortage public information campaign no later than April. Explain the supply condition to the public. Warn that ignoring conservation measures could result in Stage 3 conditions. Teach customers to read their meters. Intensify water efficiency services for residential and commercial customers.

Requested Consumer Actions:

Customers will be asked to implement Stage 2 water conservation measures and be reminded of an enforced adherence to the “no waste” ordinance.

Penalties:

Remain as stated under RLECWD regulations section 4.14.250 b.

Stage Three – Water Shortage

Definition:

The District’s supply or distribution system will not be able to meet all the water demands of its customers. With the cooperation of customers, the District’s objective is to reduce system demand by fifteen– twenty percent of average system production.

Water Conservation Policy:

- a. All Stage 1 and 2 actions remain in force.
- b. Require customers to reduce consumption by 15-20%.
- c. Further reduce landscape irrigation. Reduce watering time so that landscape irrigation is no more than 65 % of evapotranspiration. Tolerate some plant wilting. Reduce irrigation schedule to two days per week:

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- Customers with odd street numbers irrigate on two days per week, such as Saturday, and Wednesday.
 - Customers with even street numbers irrigate on two days per week such as Sunday, and Thursday.
 - No one irrigates on Monday and Friday

d. Customers should read their own water meters weekly.

Triggering Mechanism may be any of the following:

- A. A regional water supply shortage exists and a regional public outreach campaign is being implemented asking customers to reduce water use.
- B. Groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination).
- C. Alternative water supplies are unavailable
- D. Groundwater levels or groundwater quality are approaching action levels prescribed by the Sacramento Groundwater Authority, Sacramento County or some regulatory body.

Stage Three Conservation Measures due to drought should occur soon after April 1.

Consumption Limits:

Customers would be required to reduce consumption by 30-35% for the duration of the water shortage condition.

Agency Actions:

Continue and expand conservation program and agency actions listed through Stage 2, mandate compliance to Stage 3 Water Conservation Measures. Continue rigorous public information campaign in cooperation with regional water suppliers. Explain supply shortage and disseminate technical information as needed. Warn that ignoring conservation measures could result in Stage 4 conditions. Read and bill metered customers monthly. Conduct detailed review of distribution system operations to identify water losses and implement measures to significantly reduce water losses.

Requested Customer Actions:

Customers will be notified that Stage 3 water conservation measures are in effect and compliance will be mandated.

Penalties:

For the first and subsequent violation of the water conservation measures in force, customers will receive the following sequence of enforcement actions within a two week time frame: customers will receive a letter or visit from a conservation specialist advising of the Water Stage, encouraging more efficient water use, and warning against water waste; a second letter offering services such as an irrigation specialist; a written

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notice of action; a letter indicating a date for discontinuance of service; and finally service is discontinued and a progressive reconnect fee charged.

Stage Four - Water Crisis

Definition:

The district's supply or distribution system is not able to meet all the water demands of its customers under Stage 3. All customers, including businesses, will be required to reduce water consumption to achieve the District's objective to reduce demand to 60-65 percent or less of average system production.

Water Conservation Policy:

- a. All Stage 1, 2 and 3 actions remain in force.
- b. Require customers to reduce consumption by 35-40 percent.
- c. Landscape and pasture irrigation shall be limited to support minimal survival of trees and shrubs. Such irrigation should be applied only on one day per week based on the following odd-even schedule.
 - ◆ Customers with street addresses that end with odd numbers may irrigate only on Saturdays.
 - ◆ Customers with street addresses that end with even number may irrigate only on Sundays.
 - ◆ No irrigation is permitted on Mondays, Tuesdays, Wednesdays, Thursdays, nor Fridays.
- d. No potable water from the District's system shall be used to fill or refill any swimming pools, artificial lakes, ponds, or streams.
- e. Water use for ornamental ponds and fountains is prohibited.
- f. Automobiles or equipment shall be washed only at commercial establishments that use recycled or reclaimed water.
- g. Water shall not be used for cooling mists.

Triggering Mechanisms shall be a combination of the following:

- A. A regional water supply shortage exists and a regional public outreach campaign is being implemented asking customers to reduce water use.
- B. Groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination).
- C. Alternative water supplies are unavailable.

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- D. Groundwater levels are approaching action levels prescribed by the Sacramento Groundwater Authority, Sacramento County or some regulatory body.

Declaration of Stage 4 should occur no later than April 1.

Consumption Limits:

All customers would be required to reduce consumption by 35-40% until the water crisis has been declared over.

Agency Actions:

Continue all conservation program and agency action elements through Stage 3, and mandate adherence to all water conservation measures required under Stage 4. Activate metered water shortage stage 4 rate structure. Institute a rationing program through percentage cutbacks.

Requested Customer Actions:

Customers will be required to comply with all Stage 4 conservation measures.

Penalties:

For the first and subsequent violations, customers will receive the following actions within a one week time frame: customers will receive a letter or visit from a conservation specialist advising of the Water Stage, encouraging more efficient water use, and warning against water waste; a second letter offering services such as a landscape irrigation advisor; a written notice of action; a letter indicating a date for discontinuance of service; and finally service is discontinued and a progressive reconnect fee charged.

Stage Five – Water Emergency

Definition:

The District is experiencing a major failure of a water supply, storage, or distribution facility. All customers will be required to make significant efforts and reduce water consumption to achieve the District's objective to reduce demand to 50 percent or less of average system production.

Water Conservation Policy:

- a. All Stage 1, 2, 3, and 4 actions remain in force.
- b. Require customers to reduce consumption by at least 50%, with the actual reduction required to be based on the water supply available and to be determined when Stage Five is declared.

- ◆ Landscape and pasture irrigation is prohibited.

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- ◆ No potable water from the District's system shall be used for construction purposes such as dust control, compaction, or trench jetting.
- ◆ New connections to the District system will be prohibited.
- ◆ Reduce interior water use as much as possible. For example, take shorter showers.

Triggering Mechanisms shall be a combination of the following:

- A. A regional water supply shortage exists and a regional public outreach campaign is being implemented asking customers to reduce water use.
- B. Groundwater wells are inoperable or unusable (such as by power outages, mechanical failure, or contamination).
- C. Alternative water supplies are unavailable.
- D. Groundwater levels are approaching action levels prescribed by the Sacramento Groundwater Authority, Sacramento County or some regulatory body.

Declaration of Stage 5 due to drought should occur no later than April 1.

Consumption Limits:

All customers would be required to restrict consumption to 50% (or less) of normal supply for the duration of the water emergency.

Agency Actions:

Continue all conservation program and agency action elements through Stage 4, and mandate that all Stage 5 conservation measures be implemented immediately and strictly enforced. Schedule additional staff time to enforce the shortage contingency measures. Intensify media outreach program with regular updates on the state of the emergency.

Requested Customer Actions:

Customers will be required to comply with all Stage 5 water conservation measures.

Penalties:

For the first and subsequent violations, retail customers will receive the following actions within a one-week time frame: A letter and visit from a conservation specialist advising of the Water Stage; advising of required water use limitations; warning against water waste; a district notice of action with service discontinuance date and discontinuance of service and charge of a progressive reconnect fee.

Fiscal Impacts of Water Shortage Actions

Water shortage actions are outside normal water utility activities. The changes initiated by the water shortages cause impacts on revenues and expenditures not normally

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incurred. The following tables indicate some of the impacts that seem most likely to occur.

Table 26 - Actions and Conditions that Impact Revenues

Type	Water Shortage Stages	Potential Revenue Reduction
Reduction of irrigation water sales due to request to reduce consumption	III IV V	7% annual water sales 15% annual water sales 22% annual water sales
Reduction of new connection fees due to prohibition of new connections	IV V	Depends when shortage occurs

Table 27 - Actions and Conditions that Impact Expenditures

Category	Water Shortage Stages	Potential Expenditure
Customer Relations and Publicity to advise customers of shortage	II V	Less than \$2,500 More than \$15,000
Additional staff for customer education, field inspection, and office support	II III IV V	As little as \$15,000 More than \$75,000
Additional staff time for repairs, shut-offs and reconnections	III IV V	As little as \$5,000 More than \$20,000
Water purchase from alternative sources	IV V	Variable
Emergency retrofit/ repair of interconnections	IV V	Variable

Table 28 - Proposed Measures to Overcome Revenue Losses

Category	Water Shortage Stages
Increased fees for discontinuing service and reconnecting service	III IV V
Implement emergency rate schedule with higher base rate	IV V
Seek state grants	IV VII
Explore use of reserve funds	IV & V

Table 29 - Proposed Measures to Overcome Expenditure Impacts

Category	Water Shortage Stages	Expenditure Mitigation
Customer Relations and Publicity	II V	Cost share in regional outreach to media
Pumping cost will decrease	III IV V	Cost savings of \$40-50 per AF for electrical energy due to demand reduction
Expensive repair and restoration	III, IV, V	Seek state grants and other assistance